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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,860	11/15/2001	Bruce A. Judson	000192	6945
23696	7590	06/03/2005	EXAMINER	
Qualcomm Incorporated Patents Department 5775 Morehouse Drive San Diego, CA 92121-1714			GESESSE, TILAHUN	
			ART UNIT	PAPER NUMBER
			2684	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/998,860	JUDSON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tilahun B Gesesse	2684	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 1-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 31-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This is in response to applicant's argument file November 04, 2004, in which claims 1-30 have been canceled and claims 31-33 are pending.

#### ***Response to Arguments***

2. Applicant's arguments with respect to claims 31-33 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katz in view of Padovani et al (US patent No. 6,751,206).

As to claim 31, Katz discloses a method for beam forming by a base station (figures 3A-3D), the method comprising: providing a mobile station's position to a spatial processing unit (232) (column 5, lines 28-45, column 3, lines 55-67 and figure 3).

Katz inherently discloses providing a base station's position to the spatial Katz discloses calculating the direction of the mobile station with respect to base station (column 6, lines 27-51).

Katz discloses a database record for the mobile station's position and angle of arrival (column 5, line 51-column 6, line 12 and figure 3).

Katz discloses determining the phase of each element of an antenna according the number and direction of beams (column 3, lines 50-67).

Katz discloses calculating the direction of the mobile station with respect to base station (column 6, lines 27-51).

Katz does not discloses providing a base station' s position and calculating the number and direction of the beam. However, padovani discloses a base station with antenna array and beam forming and calculates the number (odd or even beams) and steers to mobile station (216) (see figure 2). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time of the invention to calculate number and direction of the received signal in doing so decrease the interference.

As to claim 32-33, , Katz discloses a base station (126), comprising: means for providing a mobile station's position to a spatial processing unit (232) (column 5, lines 28-45, column 3, lines 55-67 and figure 3). Katz discloses means for determining the phase of each element of an antenna according the number and direction of beams (column 3, lines 50-67). The combined signal is considered a signal with higher gain. As to claim 33, Katz discloses a base station (126) comprising: a processor (232) for a mobile station's position and the base station's to processor (column 5, lines 28- 45 ,column 3, lines 55-67 and figure 3). Katz discloses a spatial processing unit (232 DSP of figure 2).

Katz does not disclose providing a base station's position and calculating the number and direction of the beam. However, padovani discloses a base station with antenna array and beam forming and calculates the number (odd or even beams) and steers to mobile station (216) (see figure 2). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time of the invention to calculate number and direction of the received signal in doing so decrease the interference.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wax et al (US patent No. 6,232,918) discloses antenna array base station (12 of figure 1) and multi-path beams received at the base station from mobile station (10), see figure 1 and beam-forming phase and direction (See figure 3.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tilahun B Gesesse whose telephone number is 571-272-7879. The examiner can normally be reached on flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2684

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
TILAHUN GESESSE  
PRIMARY EXAMINER